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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/822,344 | 04/12/2004 | Michael Isner | A2002004D | 3107 |

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EXAMINER

SAJOUS, WESNER

ART UNIT PAPER NUMBER

2676

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/822,344 | ISNER, MICHAEL | |
| | Examiner | Art Unit | |
| | Sajous Wesner | 2676 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Danks (US 6522331) in view of Lake (US 6798415).

Regarding claim 1, Danks discloses a an apparatus for controlling a pose of a three-dimensional (3D) object including one or more interconnected elements (see col. 3, line 66 to col. 4, line 20 and fig. 1); means for specifying a first control object having a first pose and a second control object having a second pose in three dimensions, and means for defining a path associated with the first pose and the second pose (see col. 1, lines 32-36, col. 5, lines 10-47, and col. 8, lines 19-43 and figs. 1 and 5A-B; in the example, the idle state corresponds to first pose and running state corresponds to the second pose and are being controlled by processor 202 of fig. 2; each bone of the fig. is being defined using translation and rotation, which implies distance and direction/path of the bone); means for generating position and direction information for the interconnected elements in 3D along the path (see col. 1, lines 32-36, col. 4, lines 10-46, and col. 6, lines 1-28, and figs. 5A-B; it is noted that the rotation includes direction,

and translation of the bones are generated according to movements of the 3D fig.

Hence, via the rotation and movements of the fig., a position and direction is generated); and means for determining an amount of roll for each of one or more interconnected elements using quaternion interpolation between the two poses; (see col. 4, lines 10-46, and col. 7, lines 1-50; while the claim recites amount of roll, it is clear that by determining the rotation time an amount of roll is determined. For, the orientation of the bone, in the art, is defined as a direction and a roll around that direction. And it is noted that a transition combiner node is used to interpolate the data between two animations (such as idle and running as depicted in Fig. 5A-B. Thus, Danks meets the claimed features)).

Danks does not disclose the quaternion interpolation.

Lake, in a similar ad, teaches performing quaternion interpolation along a path in a three dimensional model (see lines 4-59 of column 2 and Figs. 4-10). Therefore, it would have been obvious to one of ordinary skill in the art to substitute the interpolation method of Lake for the interpolation method of Danks because Lake teaches that by utilizing the quaternion interpolation would produce more life-like dynamics in real-time simulations and reduce animator workload (see Lake's lines 57-59 of column 2). Note also that because both Danks and Lake are directed to method of using interpolation to determine 3D model movements of bone structures, Danks and Lake are analogous art.

Re claim 2, Danks discloses the one or more interconnected elements define a spine of 3D object (as depicted by elements 102 to 110 of fig. 1).

Regarding claim 3, Danks discloses the interpolation permits a determination of a rotation greater than 180 degrees (see lines 47-65 of column 6. It is noted that the data generator can have a limit DG node to check the range of the rotation). Therefore, it would have been an obvious matter of design choice to modify Danks by having the rotation range of greater than 180 degrees, since the Applicant has not disclosed that having the range at the specified degree solves any stated problem and it appears that the animation interpolation method of Danks would perform equally well with the rotation range at any degree limit.

Regarding claim 4, statements presented above, with respect to claim 1 are incorporated herein.

Claim 5 is rejected under the same rationale as claim 2.

Claim 6 is rejected under the same rationale as claim 3.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kroitor discloses generating computer-assisted animation in which a 3D drawing wand is moved to generated constructed poses from a plurality of source poses.

Witek et al. (US 4,797,836) disclose an image orientation and animation using quaternions.

Lake et al. (US 2002/0196258) disclose rendering method of three-dimensional models using quaternions.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sajous Wesner whose telephone number is 571-272-7791. The examiner can normally be reached on Mondays thru Fridays between 11:00 AM and 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wesner Sajous -WS-

PARTIAL SIGNATORY AUTHORITY EXAMINER



11/10/05